WE CLAIM:

1. A method for diagnosing muscle protein wasting in a patient suffering from or susceptible to muscle protein wasting, said method comprising the steps of:

(a) homogenizing a muscle biopsy sample and solubilizing the proteins therein;

(b) separating the proteins solubilized in step (a) according to size;

(c) contacting the proteins separated by size in step (b) with a ligand specific for at least one actin protein;

(d) detecting the binding of a ligand specific for at least one actin protein to at least one actin protein among the separated proteins,

whereby muscle protein wasting is detected when an actin protein of about 14 kDa (as estimated by sodium dodecyl sulfate polyacrylamide gel electrophoresis) is detected in the proteins solubilized and separated from the muscle biopsy sample and wherein said actin protein of about 14 kDa is present in an increased amount in said patient biopsy sample as compared with a muscle biopsy sample from a normal individual.

2. The method of claim 1 wherein the proteins are separated according to size using sodium dodecyl sulfate polyacrylamide gel electrophoresis.

3. The method of claim 1 wherein the ligand in step (c) is an actin-specific antibody.

4. The method of claim 4 wherein the actin-specific antibody is specific for the C-terminus of actin and is an antibody produced by a first animal species.

5. The method of claim 4 wherein the detecting in step (d) is carried out using a second antibody produced in a second animal species, which second antibody is specific for an antibody produced by the first animal species.

6. The method of claim 5 wherein the second antibody has a detectable label.

7. The method of claim 6 wherein the detectable label is an enzyme.

8. The method of claim 1 wherein the patient is suffering from or is susceptible to a catabolic disorder.

9. The method of claim 8 wherein the catabolic disorder is sepsis, cancer, starvation, uremia, malnutrition, diabetes, burn injury, chronic renal failure, metabolic acidosis, acquired immunodeficiency syndrome, muscle denervation or trauma.

10. A method of preventing or reducing the degradation of muscle protein in a subject having a condition that stimulates muscle protein breakdown comprising the step of administering to the subject a pharmaceutically effective amount of a caspase enzyme inhibitor or an inhibitor of an activator of caspase enzymes.

11. The method of claim 10, wherein the condition is a catabolic illness.

12. The method of claim 10, wherein the condition is selected from the group consisting of uremia, sepsis, metabolic acidosis, burn injury, AIDS, cancer, muscle denervation, trauma and diabetes.

13. The method of claim 10, wherein the caspase enzyme inhibitor is a caspase 3 inhibitor.

14. The method of claim 10, wherein the subject is selected from a human and an animal.

15. A method of increasing muscle mass or preventing loss of muscle mass in a subject achieved by administering to the subject an effective amount of a caspase enzyme inhibitor or an inhibitor of an activator of caspase enzyme or of the enzymes that activate caspases (e.g., enzymes or chemicals that block the activity of phosphatidylinositol 3-kinase).

16. The method of claim 15, wherein the subject is a farm animal.

17. The method of claim 15 wherein the inhibitor is PI3 Kinase or PI34P2.